CLAIMS

What is claimed is:

1. A method for laser scribing a wafer comprising:

laser scribing a continuous line; and

laser ablating an area adjacent the laser scribed continuous line, the laser ablations in the area adjacent the laser scribed continuous line being spaced from one another.

2. The method for laser scribing a wafer of claim 1 wherein the laser ablations in the area adjacent the laser scribed continuous line are non-overlapping.

3. The method for laser scribing a wafer of claim 1 wherein the laser scribed line and the laser ablated area adjacent the laser scribed continuous line have a width greater than the width of a diamond saw blade.

4. The method for laser scribing a wafer of claim 1 wherein the laser scribed line and the laser ablated area adjacent the laser scribed continuous line have a width greater than the width of a kerf from a diamond saw blade.

5. The method for laser scribing a wafer of claim 1 wherein laser scribing a continuous line is done next to a die on a wafer and wherein laser ablating an area adjacent the laser scribed continuous line is done more distant from the die of the wafer.

6. The method for laser scribing a wafer of claim 1 wherein the laser ablations in the area adjacent the laser scribed continuous line are spaced from one another in a range of 1 to 100 microns.

7. The method for laser scribing a wafer of claim 1 wherein the laser ablations in the area adjacent the laser scribed continuous line are spaced from one another in a range of 1 to 20 microns.

8. A computer readable medium containing instructions for causing a suitably programmed computer to execute the method of claim 1.

9. A method for singulating dies from a wafer comprising:

laser scribing a continuous line on each side of the die; and

laser ablating an area adjacent the laser scribed continuous line on each side of the die, the laser ablations in the area adjacent the laser scribed continuous line on each side of the die being spaced from one another; and

sawing the laser abated area adjacent the continuous line.

10. The method for singulating dies from a wafer of claim 9 wherein laser scribing a continuous line produces a continues line proximate a die on a wafer and wherein laser ablating an area adjacent the laser scribed continuous line is at an area more distant from the die of the wafer.

11. The method for singulating dies from a wafer of claim 9 wherein the laser ablations in the area adjacent the laser scribed continuous line are non-overlapping.

12. The method for singulating dies from a wafer of claim 9 wherein the laser scribed line and the laser ablated area adjacent the laser scribed continuous line occupy an area having a width greater than the width of a saw blade.

13. The method for singulating dies from a wafer of claim 9 wherein the laser scribed line and the laser ablated area adjacent the laser scribed continuous line have a width greater than the width of a kerf from a saw blade.

14. The method for singulating dies from a wafer of claim 9 wherein the laser ablations in the area adjacent the laser scribed continuous line are spaced from one another in a range of 2 to 10 microns.

15. A computer readable medium containing instructions for causing a suitably programmed computer to execute the method of claim 9.

16. A method for laser scribing a wafer comprising:

laser scribing a first continuous line;

laser scribing a second continuous line spaced apart from the first continuous line; and

laser scribing a third continuous line, the third continuous line positioned between the first continuous line and the second continuous line.

17. The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap.

18. The method for laser scribing a wafer of claim 16 wherein the third continuous line overlaps the second continuous line and the third continuous line.

19. The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line are formed from overlapping pulses from a laser.

20. The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a saw blade.

21. The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a kerf from a saw blade.

22. A computer readable medium containing instructions for causing a suitably programmed computer to execute the method of claim 16.

23. A method for singulating dies from a wafer comprising:

laser scribing a first continuous line;

laser scribing a second continuous line spaced apart from the first continuous line;

laser scribing a third continuous line, the third continuous line positioned between the first continuous line and the second continuous line; and

passing a saw through the area of the first continuous line, the second continues line and the third continuous line to cut the wafer.

24. The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line overlap.

25. The method for singulating dies from a wafer of claim 24 wherein the third continuous line overlaps the second continuous line and the third continuous line.

26. The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line are formed from overlapping pulses from a laser.

27. The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a kerf from a saw blade.

28. A computer readable medium containing instructions for causing a suitably programmed computer to execute the method of claim 24.

29. An apparatus comprising:

a laser adapted to direct laser energy toward a wafer;

a saw

a microprocessor for controlling the direction of the laser energy and controlling the movement of the saw;

a memory operatively coupled to the microprocessor; said memory including an instruction set to cause a suitably programmed apparatus to

laser scribe a first continuous line on a wafer; and

laser scribe an area near the first continuous line but not contacting the first continuous line.

30. The apparatus of claim 29 wherein the laser scribe of the area near the first area includes laser scribing a second line near the first line and further comprising laser scribing a third line overlapping the first continuous line and the second line.

31. The apparatus of claim 29 wherein the laser scribe of the area near the first area includes producing a plurality of spaced laser ablations in the area adjacent the first continuous line.